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ABSTRACT

All hospitals, nursing homes, clinics, and home nursing and ambulance services in New York State were surveyed to determine projected needs for 39 specific occupations for nursing staff, technicians, and aides. There were 326,000 persons working in the medical care facilities in December 1966, and 182,000 held jobs in the 39 occupations. Hospitals employed four out of every five individuals included in the study. It was projected that over 5-year period between 1966 and 1971, medical establishments would need 152,790 new employees. School and in-service training programs were expected to graduate 97,000 persons for the surveyed occupations in this 5-year period. In only 10 of the 39 occupations did the output equal the projected need, and for the other occupations, the demand was expected to exceed supply by 26,000. Largest shortages were expected for nurses (9,000) and nurse aids (9,000). (BC)

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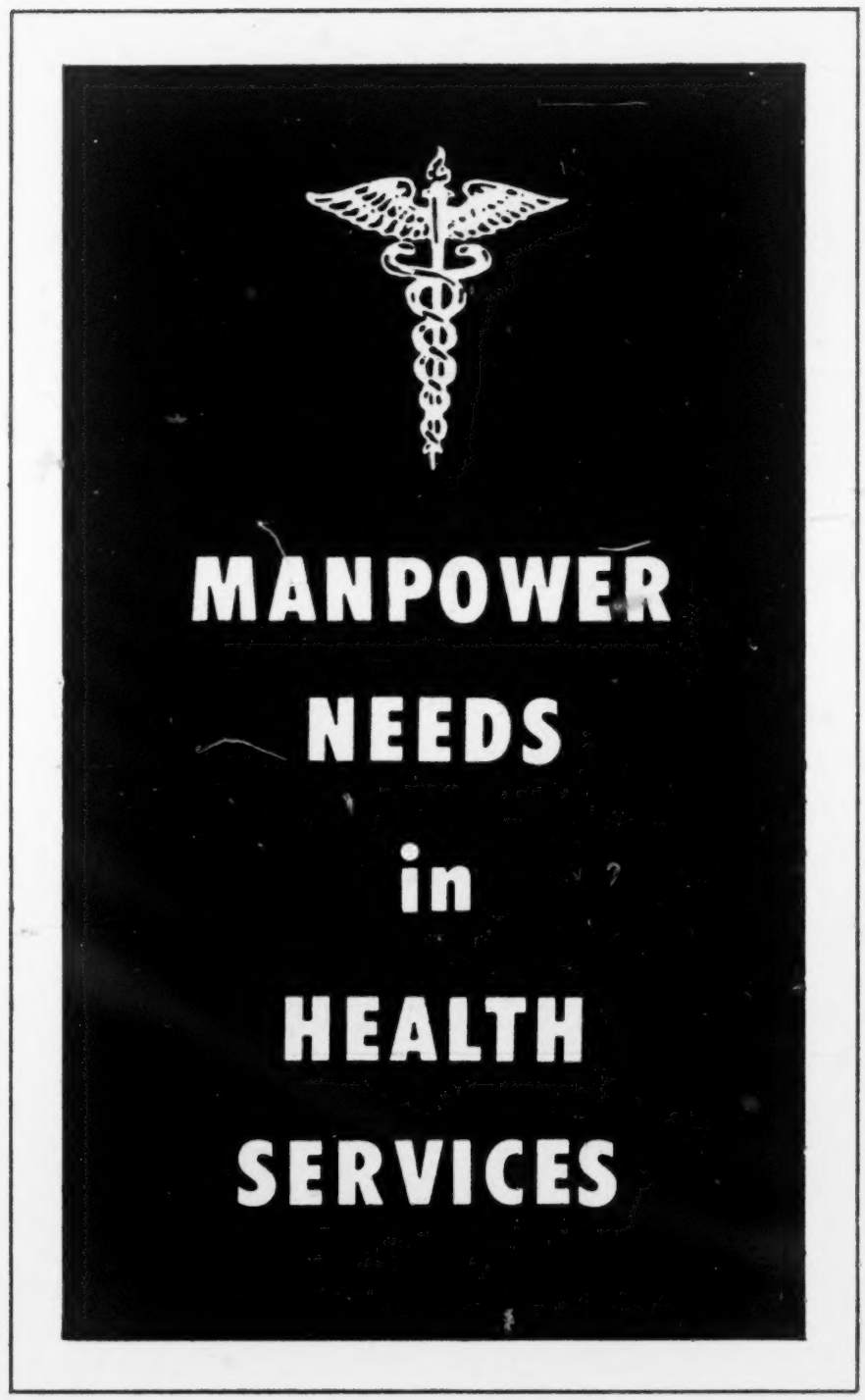

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STATE OF NEW YORK
Nelson A. Rockefeller, Governor

DEPARTMENT OF LABOR
M.P. Catherwood, Industrial Commissioner

DIVISION OF EMPLOYMENT
Alfred L. Green, Executive Director

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MANPOWER NEEDS
in
HEALTH SERVICES

July 1969

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Introduction

IN JANUARY 1967, THE DIVISION OF EMPLOYMENT of the New York State Department of Labor launched a survey of current and projected manpower requirements in medical care facilities in New York State. The need to focus manpower research efforts in this direction was dictated by:

> ... the expanding demand for health services brought about by the steady population growth and rising standard of living, and by the spread of public and private health insurance programs;
>
> ... the resulting aggravation of existing personnel shortages in nursing occupations;
>
> ... the growing demand for both conventional and new types of technicians in laboratory fields;
>
> ... the need for new and specialized administrative techniques to improve and expand the organization and delivery of health services;
>
> ... the accelerated increase in scientific knowledge and the development of new technology and techniques in diagnostic, preventive, therapeutic, prosthetic and rehabilitative procedures;
>
> ... the popularity and success of State and federally sponsored training programs for the occupations of licensed practical nurse, nurse aide and orderly, and the high degree of minority group participation in these programs; and
>
> ... the recognition, born of all these factors, that manpower needs in the health service field can provide uniquely appropriate career opportunities for the disadvantaged, both in existing occupations and in occupations yet to be defined.

Clearly, planning for the effective realization of these prospects and for the orderly satisfaction of these needs requires that more explicit, relevant and comprehensive information than they now have be placed in the hands of both public and private administrators concerned with the provision of health care to the people of this State. Specific measurement of occupational demand and supply can be particularly useful to guidance and placement counselors, education and training officials, management analysts, operators of medical establishments and services, and a variety of health and community leaders and planners.

In the conduct of the survey, all hospitals, nursing homes, clinics, home nursing services and ambulance services in New York State were canvassed and asked to report their current and projected needs for nursing staff, technicians, and aides in 38 specific occupations. Sampling was used for the canvass of private physicians' offices. A 39th occupational title, physician's receptionist, was added for analysis, when it was found to be more numerous than any other occupational title employed by physicians.

In order to concentrate on the major fields of medical care, the survey did not cover medical and dental laboratories, drugstores,

school health services, and other health facilities not primarily concerned with direct medical care to patients. Specific occupational coverage was limited generally to nursing staff, clinical technicians, and aides. Among the health personnel not covered by the survey were doctors, dentists, pharmacists, optometrists, social workers, dental assistants, and hospital laundry and food workers.

It should also be noted that the manpower projections contained in this report could be substantially altered by: movement into and out of the occupation or the State; the amount of informal training on the job provided by individual employers; the extent to which graduates of training courses accept employment in their fields; the unplanned creation of new establishments not now predicted; or changes in patterns of staffing and manpower utilization.

For a better understanding of the coverage and the gaps, a more detailed discussion of the scope of the survey is presented in the Appendix, which deals also with conceptual and operational components of manpower demand and manpower supply.

Highlights

- There were 326,000 persons working in the surveyed medical care facilities in December 1966.
- Better than half—182,000—held jobs in the 39 occupations studied in this report.
- Hospitals accounted for four of every five jobs overall and for three of four in the selected occupations.
- Over the five years between 1966 and 1971, the medical establishments will need a total of 152,790 new employees—in the surveyed and non-surveyed occupations—to fill current and future openings.
- For the surveyed occupations, employers will need a total of 113,000 new employees: 21,000 to fill currently vacant positions, 53,000 for new positions which will be created in response to planned growth in the industry, and 39,000 for positions which will become vacant over the 5-year period as a result of deaths, retirements and other permanent separations.
- School and in-service training programs are expected to produce a combined total of 97,000 graduates for the surveyed occupations in this 5-year period; but in only ten of the 39 occupations does this output equal or exceed the identified need; in the other 28 occupations for which training estimates were obtained, the gap between projected demand and supply is 26,000, with individual shortages ranging from 23 medical illustrators to almost 9,000 nurses and 9,000 nurse aides.
- Currently planned expansion of regular school training programs is thus insufficient and in some instances would not even compensate for existing temporary programs when the latter are discontinued.
- The condition which exists is not lack of capacity for training but lack of successful participation by potential trainees. This condition gives rise to the following questions:

  Can anything be done to make the health careers more attractive to young people, or make the training programs more effective in holding trainees to completion?

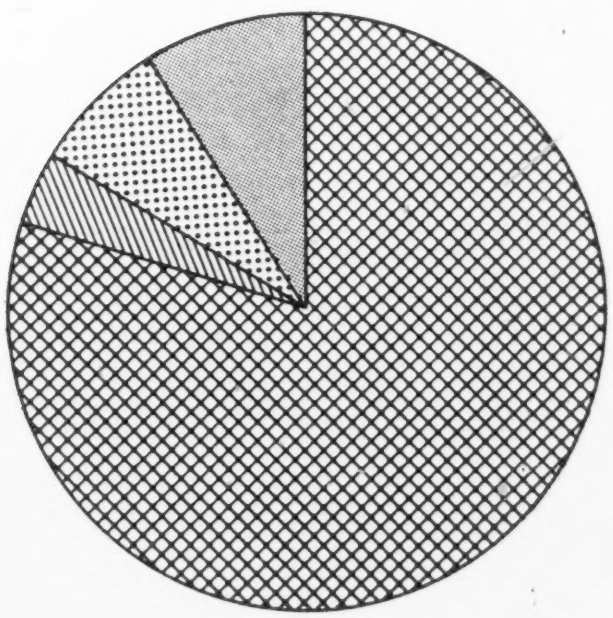
  Should temporary training programs be continued and, perhaps, expanded, on the theory that they attract potential trainees from among population groups which are not accessible to, or which have limited access to, regular training programs?

Answers to these questions cannot be given on the basis of this study which was designed for the limited purpose of exploring the trends in the existing medical service labor markets.

GENERAL FINDINGS

MOST MEDICAL CARE WORKERS ARE EMPLOYED IN HOSPITALS AND IN URBAN CENTERS

December 1966 Employment in Medical Care Establishments



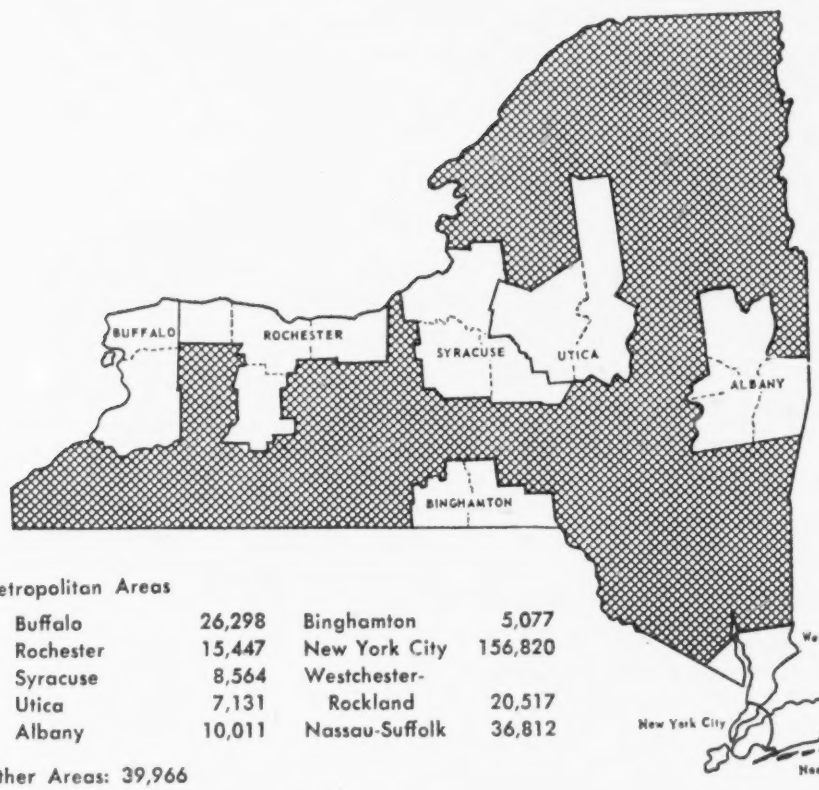
The 326,643 workers in the medical care establishments of New York State were employed as follows:

——Hospitals: 261,415 workers or 80%

——Clinics: 13,490 workers or 4%

——M.D. offices: 23,350 workers or 7%

——Nursing homes: 28,388 workers or 9%



Employment is concentrated in the urban centers, particularly in New York City, which has nearly half the workers in these medical care facilities. Less than one-eighth of these workers were employed outside the nine major areas.

Anticipated growth rates in the five-year projection period average 27 per cent in metropolitan areas as against 22 per cent in other areas, with the result that the urban concentration will go slightly higher and the proportion employed outside the major areas will be closer to one-ninth. The range of anticipated growth rates in medical care employment among the metropolitan areas is from 16 per cent in Rochester to 33 per cent in Syracuse over the five-year period.

Metropolitan Areas

Buffalo	26,298	Binghamton	5,077
Rochester	15,447	New York City	156,820
Syracuse	8,564	Westchester-Rockland	20,517
Utica	7,131	Nassau-Suffolk	36,812
Albany	10,011		

Other Areas: 39,966

The 181,837 workers employed in the 39 occupations surveyed comprised 56 per cent of the total employment in medical care establishments. By type of establishment, this proportion ranged from 40 per cent in clinics to 94 per cent in physicians' offices.

Medical care establishments	Overall employment	39 surveyed occupations	
		Number	Per cent
All types	326,643	181,837	56
Hospitals	261,415	134,977	52
Nursing homes	28,388	19,528	69
Physicians' offices	23,350	21,903	94
Clinics, etc.	13,490	5,429	40

In the major labor areas, the surveyed occupations represented from 51 to 63 percent of overall employment in medical care establishments.

Labor area	Overall employment	39 surveyed occupations	
		Number	Per cent
New York City	156,820	80,486	51
Nassau-Suffolk	36,812	23,065	63
Westchester-Rockland	20,517	11,894	58
Albany	10,011	6,077	61
Binghamton	5,077	3,215	63
Buffalo	26,298	14,380	55
Rochester	15,447	8,596	56
Syracuse	8,564	4,721	55
Utica	7,131	4,106	58
Remainder of State	39,966	25,297	63

Most of the Expansion Is Expected in the Surveyed Occupations

Medical care establishments expect a 27 per cent overall expansion of their work force in the next five years, but expect employment in the surveyed occupations to rise by 40 per cent.

At this higher rate of expansion, the surveyed occupations will rise as a group from 56 per cent of current employment in medical care establishments to 62 per cent five years from now.

The nominal reduction in physicians' offices from 94 per cent to 93 per cent of overall employment is attributed to anticipated or desired replacement of some part-time receptionists by full-time workers and the expected increase in clerical and bookkeeping help.

Medical care establishments	Surveyed occupations as per cent of overall employment	
	Current	Projected
All types	56%	62%
Hospitals	52	59
Nursing homes	69	75
Physicians' offices	94	93
Clinics, etc.	40	47

This finding concerning expansion of employment in the group of 39 surveyed occupations rests on the reported number of budgeted positions to be filled, including existing positions currently vacant and new positions being planned. Since it currently takes 181,837 persons (including part-time workers) to fill 171,219 positions, it is assumed for the purpose of this analysis that there will be no change in the existing proportion of part-time employment.

The logic of this assumption is that part-time work will continue to be wanted by certain workers for family and other personal reasons, and also by employers when it fits their needs for week-end fill-ins, swing-shift stand-by's, and relief hands.

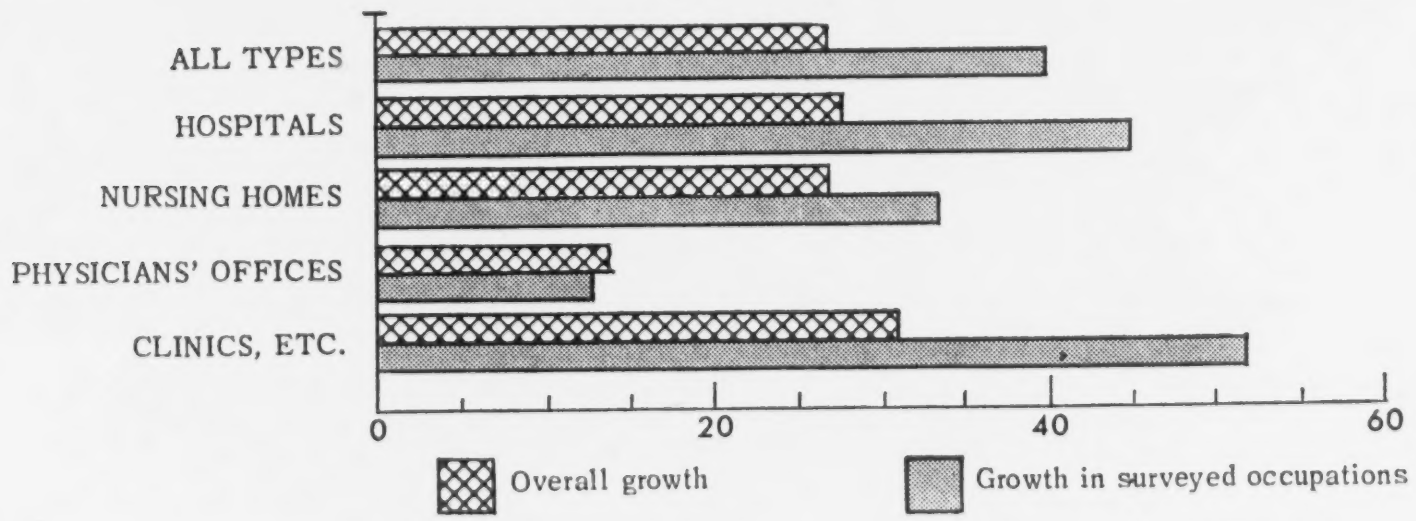
If the use of part-time employment is reduced in the future, then the number of workers needed could decline to the number of budgeted positions. But actual employment may then fall short of that number—and the training need enlarged, for lack of trained full-timers.

On the other hand, if employers decide to make more use of part-timers, the total number of hires needed to fill the budgeted positions will rise further. Whether this need would be met by more workers returning to the labor force, by workers apportioning their time to more than one employer, or by training more new workers for part-time employment, remains a matter of conjecture.

In the absence of a clear indication to the contrary, the most reasonable assumption is a continuance of the existing proportion of part-time employment. Of the 10,618 extra persons occasioned by the use of part-time work (181,837 persons on

EXPECTED EMPLOYMENT GROWTH IN MEDICAL CARE ESTABLISHMENTS IN FIVE YEARS

(In per cent of expected growth)



the payroll to fill 171,219 positions), 9,676 are in the three largest occupations—i.e. registered nurse, licensed practical nurse, and nurse aide. Other occupations in which part-time work is substantial include medical laboratory assistant (176 extra persons), medical technologist (97), and X-ray technician (60).

Required Additions Exceed Current Employment in One-Third of Surveyed Occupations

The measured manpower needs reflect a total of 112,983 additional workers required during the five-year projection period—20,685 for current vacancies, 53,583 for planned growth, and 38,715 for replacement of deaths, retirements, etc.

In one-third of the surveyed occupations, the number of needed additions is greater than the number of workers currently employed. These occupations are:

Occupation	Current employment	Required additions
Ward Manager	160	257
Cytotechnologist	181	204
Artificial Kidney Technician	18	65
Cardiopulmonary Technician	103	148
Oxygen Therapy Technician	702	776
Physical Therapist	1,138	1,213
Physical Therapy Aide	469	878
Occupational Therapist	738	1,256
Occupational Therapy Aide	512	526
Educational Therapist	85	97
Orthoptist	28	31
Home Attendant	274	477
Orthopedic Cast Technician	43	66

Current Vacancies Account for 18 per cent of the Five-Year Expansion Need

Of the estimated 112,983 job openings which are expected to occur during the five-year period from 1966 to 1971, almost one-fifth (18 per cent) of the need is immediate, reflecting inability to recruit enough workers to fill current job openings. Filling of these current vacancies alone would require an 11 per cent increase of employment in the surveyed occupations. The highest rates by occupation are:

Occupational Therapist	39%
Home Attendant	31
Nurse (R.N.)	29
Operating Room Technician	27

The largest numbers of current job openings are in the nursing, secretarial and radiological occupations:

Workers Needed To Fill Current Vacancies

Occupation	Number
Total, surveyed occupations	20,685
Leading occupations:	
Nurse (R.N.)	13,844
Staff Nurse	12,681
Other (administration, teaching, etc.)	1,163
Licensed Practical Nurse	2,746
Psychiatric Aide	722
Orderly	665
Medical Secretary	567
X-ray Technician	515

Of further interest is the fact that employment of nurse aides exceeds the number of budgeted positions in that occupation. (See Table 2A, page 11). This seems to reflect an effort (particularly in New York City hospitals) to provide additional needed hands by a reallocation of funds budgeted for R.N.'s and L.P.N.'s but unused in those occupations because of recruitment failures.

New Positions Anticipated Will Increase Job Openings by 48 per cent

Anticipated growth of medical care facilities and programs will account for 48 percent of the new job openings and will require a further increase over current employment in the 39 surveyed occupations totaling 29 per cent in five years. Assuming no change in the existing proportion of part-time employment, these establishments will need 53,583 more workers in these occupations five years from now than they currently need.

Workers Needed for New Positions

Occupation	Number	Per cent of current employment
Total surveyed occupations	53,583	29
Leading occupations, by number:		
Nurse (R.N.)	14,524	30
Nurse Aide	12,945	28
Licensed Practical Nurse	5,492	27
Psychiatric Aide	3,746	22
Leading occupations, by per cent:		
Artificial Kidney Technician	62	344
Physicial Therapy Aide	723	154
Ward Manager	221	138

Half of the the new positions will be for nurses (R.N.) and nurse aides. The largest percentage increases of positions will be in the newly emerging occupations of artificial kidney technician and ward manager, and the relatively new physical therapy aide.

Replacement Needs Account for 34 per cent of Estimated Job Openings from 1966 to 1971

Additional openings—amounting to 21 per cent of current employment in the surveyed occupations—will occur during the next five years as a result of deaths, retirements, departures from the State, and other permanent separations from the labor force.

The largest replacement needs for this kind of turnover are in the nursing and medical secretarial occupations listed. In three of these—licensed practical nurse, receptionist and medical assistant—the replacement needs exceed the anticipated growth.

Workers Needed for Replacement

Occupation	Replacement need (death, retirement, etc.)
Total surveyed occupations	38,715
Leading occupations	
Nurse (R.N.)	10,055
Nurse Aide	9,299
Licensed Practical Nurse	7,148
Psychiatric Aide	3,044
Medical Secretary	1,405
Receptionist (MD Office)	1,263
Orderly	870
Medical Assistant	784

More research attention is advisable on other kinds of turnover, including dismissal, temporary withdrawal, and transfer or job-switching, which were not successfully measured by this survey.

Number of Graduates of Training Programs Will Fall Short of Need

During the five-year period, over 97,000 graduates are expected from known training programs (school and in-service) for the surveyed occupations in New York State. This represents 88 per cent of the measured five-year manpower need. In these terms, training output falls short of the identified need in all but ten of the surveyed occupations. (See Table 3, page 14).

Among the occupations in which shortages are anticipated, the percentage of the identified need being met by training output ranges from zero to 96, as the following examples show:

Occupation	Per cent of identified need being met	Remaining shortage
Nurse Aide	57	8,945
Nurse (R.N.)	77	8,747
Ward Clerk	38	1,544
Orderly	71	949
Occupational Therapist	32	888
Physical Therapy Aide	16	736
Medical Record Clerk	35	602
Medical Supply Clerk	13	472
Pharmacy Helper	11	276
Home Attendant	44	266
Physical Therapist	82	215
Educational Therapist	4	93
X-ray Technician	96	74
Orthoptist	—	31
Medical Illustrator	8	23

These data present the optimal rather than the actual picture; that is, they give some indication of the manpower balance in the surveyed occupations under minimum demand conditions and maximum supply.

Supply and demand factors not accounted for in these data include:

(a) competing demand from other parts of the health service industry;
(b) attrition of supply, by non-employment in the occupation after training;
(c) accretion of supply, by in-migration from training programs outside the State; and
(d) job switching, informal training on the job, etc.

Were these factors all measurable, the estimate of shortages in the above occupations might be even larger; in addition there could be shortages in other occupations where none had been reported.

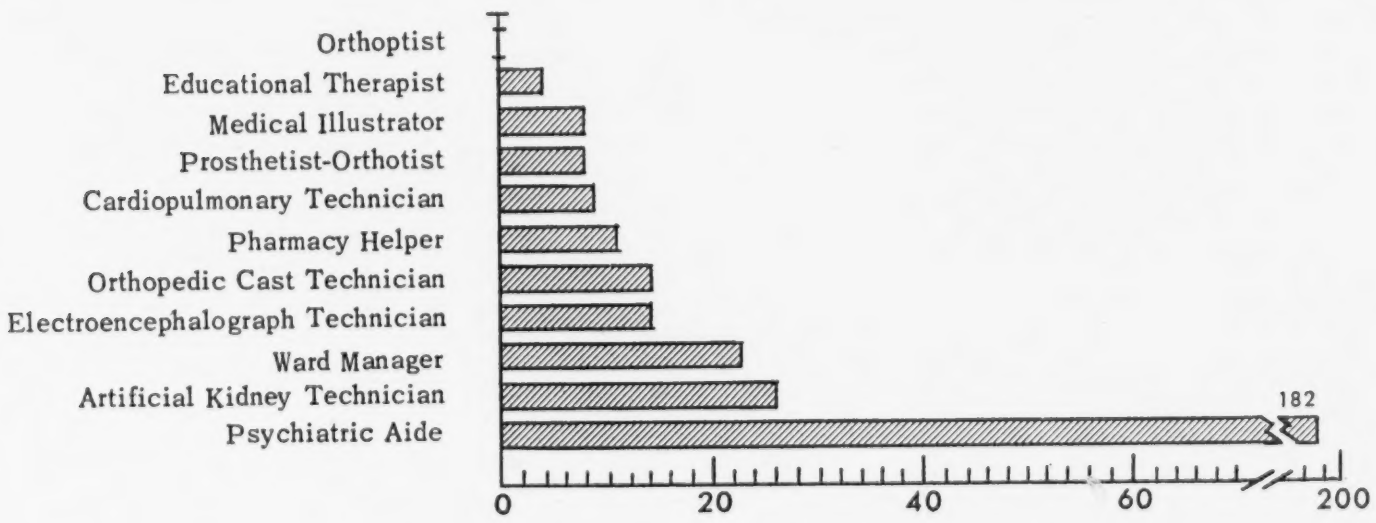
Similarly, what may appear in Table 3 as reflections of excessive training in a number of occupations, such as psychiatric aide, may indeed be reflections of special reaction to these factors. Thus, the computed surplus of 6,175 trainees for psychiatric aide would be in fact liquidated by continuation of the high turnover experienced in this occupation. The institutions concerned are administratively planning their in-service training programs at a level required to meet this special problem, though, as indicated, the overall dimensions of the turnover problem were beyond the capacity of this survey to measure.

Planned Expansion of Training Programs Will Still Leave Shortages

Reported plans for increasing the number of graduates of certain regular school training programs apparently will not narrow the gap, but only compensate for the possible discontinuance of temporary State and Federal government programs. The projected five-year total of graduates (61,489) is roughly equivalent to five times the 1966 total from regular (10,857) and temporary (1,488) programs combined. (See Table 4, page 15). The net effect, then, is not an increase in total training but merely a maintenance of present levels of training by replacement of temporary programs with regular programs.

This situation projects a 12 per cent gap between demand and supply, and temporary programs currently constitute 12 per cent of the school training programs; either the temporary programs must therefore be retained at current or even higher levels or the regular school and in-service programs must be expanded further if shortages are to be overcome.

Enrollments in 1967 were 20 per cent below capacity in regular school training programs; and the number of graduates was 44 per cent below enrollment in both regular and temporary programs. Presumably then, some further enlargement of training output could be achieved without expansion of existing facilities. For 11 of the surveyed occupations, however, it must be noted that there are *no* school training programs planned anywhere in the State. In one of these (orthoptist) there is no formal in-service training either, and in four others the existing in-service programs produce less than 10 per cent of the identified need.



No attempt is made in this report to prescribe training programs to meet the manpower needs of health services in New York State. This is, properly, the task of educators and planners. It is believed, however, that trainers in education and industry, with the information here provided and from their own sources too, should be able to judge how well manpower needs are being met by their training efforts, past and present. It should also help them judge how these manpower needs will affect their plans for the future.

APPENDIX

This Appendix includes detailed tables, a statement on methodology and scope, and a list of job definitions for the occupations covered in the survey. Copies of the survey forms and instructions may be had on request.

Table 1. Summary: Employment in Medical Care Establishments, by Type and Area, New York State

Type of establishment and area	Number of establishments	Total employment			Employment in 39 surveyed occupations			
					December 1966			
		December 1966	Five-year projection 1971	Per cent increase in five years	Actual	Full-time equivalent of current employment	Projected 1971 (budgeted full-time positions)	Per cent increase in five years [1]
New York State, total	12,460	326,643	414,104	27%	181,837	171,219	240,386	40%
Hospitals	437	261,415	333,780	28	134,977	125,877	182,488	45
Nursing Homes	616	28,388	36,057	27	19,528	18,441	25,480	38
Physicians' Offices	10,893	23,350	26,622	14	21,903	[2] 21,903	[2] 24,837	13
Clinics, etc. [3]	514	13,490	17,645	31	5,429	4,998	7,581	52
Metropolitan areas, total	10,876	286,677	365,162	27	156,540	148,859	206,510	39
New York:								
City	5,805	156,820	202,644	29	80,486	77,393	105,424	36
Nassau-Suffolk	1,428	36,812	45,891	25	23,065	21,753	31,195	43
Westchester-Rockland	907	20,517	26,828	31	11,894	10,947	15,931	46
Albany	452	10,011	12,461	24	6,077	5,794	7,694	33
Binghamton	187	5,077	6,698	32	3,215	2,895	4,137	43
Buffalo	867	26,298	32,920	25	14,380	13,218	18,215	38
Rochester	562	15,447	17,940	16	[4] 8,596	8,596	12,002	40
Syracuse	426	8,564	11,402	33	4,721	4,335	6,825	57
Utica	242	7,131	8,378	17	4,106	3,928	5,087	30
Other areas, total	1,584	39,966	48,942	22	25,297	22,360	33,876	52

[1] Increase of projected full-time positions over full-time-equivalent of current employment.
[2] Figure represents number of workers rather than full-time equivalent or positions.
[3] Includes non-hospital-affiliated ambulance services and home nursing services as well as clinics.
[4] Figure represents full-time equivalent, since too few respondents in this group gave detail for actual.

Table 2A. Estimated Understaffing in Surveyed Occupations at Medical Care Establishments, New York State, December 1966

Occupation	Current actual employment	Full-time equivalent of current employment	Current budgeted positions	Estimated understaffing
Total, surveyed occupations	181,837	171,219	190,063	11.0%
1. Nurse (R.N.)	48,576	42,890	55,118	28.5
2. Licensed Practical Nurse	20,192	18,907	21,474	13.6
3. Nurse Aide	45,581	42,876	41,539	—3.1
4. Orderly	4,264	4,136	4,782	15.6
5. Ward Manager	160	160	171	6.9
6. Medical Supply Clerk	1,004	1,000	1,078	7.8
7. Ward Clerk	3,495	3,453	3,714	7.6
8. Cytotechnologist	181	180	205	13.9
9. Medical Technologist	2,789	2,692	3,003	11.6
10. Medical Laboratory Assistant (Technician)	3,533	3,357	3,580	6.6
11. Laboratory Helper	1,125	1,113	1,172	5.3
12. Pharmacy Helper	399	389	421	8.2
13. Artificial Kidney Technician	18	18	18	—
14. Cardiopulmonary Technician	103	102	116	13.7
15. Electrocardiograph Technician	977	954	997	4.5
16. Electroencephalograph Technician	190	187	193	3.2
17. Oxygen Therapy Technician	702	688	759	10.3
18. X-ray Technician	3,477	3,417	3,924	14.8
19. Physical Therapist	1,138	1,086	1,317	21.3
20. Physical Therapy Aide	469	455	516	13.4
21. Occupational Therapist	738	694	967	39.3
22. Occupational Therapy Aide	512	504	517	2.6
23. Recreational Therapist	598	578	699	20.9
24. Educational Therapist	85	85	92	8.2
25. Speech & Hearing Clinician	198	185	221	19.4
26. Orthoptist	28	28	30	7.1
27. Prosthetist-Orthotist	44	43	44	2.3
28. Ambulance Attendant	861	845	873	3.3
29. Home Attendant	274	236	310	31.4
30. Medical Assistant	4,308	4,308	4,471	3.8
31. Orthopedic Cast Technician	43	40	45	12.5
32. Operating Room Technician	1,360	1,321	1,677	26.9
33. Psychiatric Aide	16,725	16,689	17,411	4.3
34. Medical Illustrator	39	39	41	5.1
35. Medical Record Librarian	465	453	519	14.6
36. Medical Record Technician	441	438	470	7.3
37. Medical Record Clerk	1,583	1,555	1,638	5.3
38. Medical Secretary	7,985	7,941	8,506	7.1
39. Receptionist (MD Office)	7,177	7,177	7,435	3.6

Table 2B. Projected Growth in Surveyed Occupations at Medical Care Establishments, New York State, December 1966 to 1971

Occupation	Current budgeted positions, December 1966	Projected budgeted positions, 1971	Rate of growth 1966 to 1971
Total, surveyed occupations	190,063	240,386	29.4%
1. Nurse (R.N.)	55,118	67,939	29.9
2. Licensed Practical Nurse	21,474	26,619	27.2
3. Nurse Aide	41,539	53,718	28.4
4. Orderly	4,782	6,435	40.0
5. Ward Manager	171	392	138.1
6. Medical Supply Clerk	1,078	1,386	30.8
7. Ward Clerk	3,714	5,349	47.4
8. Cytotechnologist	205	350	80.6
9. Medical Technologist	3,003	3,921	34.1
10. Medical Laboratory Assistant (Technician)	3,580	4,587	30.0
11. Laboratory Helper	1,172	1,568	35.6
12. Pharmacy Helper	421	621	51.4
13. Artificial Kidney Technician	18	80	344.4
14. Cardiopulmonary Technician	116	230	111.8
15. Electrocardiograph Technician	997	1,286	30.3
16. Electroencephalograph Technician	193	324	70.1
17. Oxygen Therapy Technician	759	1,323	82.0
18. X-ray Technician	3,924	4,811	26.0
19. Physical Therapist	1,317	2,029	65.6
20. Physical Therapy Aide	516	1,217	154.1
21. Occupational Therapist	967	1,776	116.6
22. Occupational Therapy Aide	517	922	80.4
23. Recreational Therapist	699	977	48.1
24. Educational Therapist	92	165	85.9
25. Speech & Hearing Clinician	221	332	60.0
26. Orthoptist	30	53	82.1
27. Prosthetist-Orthotist	44	60	37.2
28. Ambulance Attendant	873	1,137	31.2
29. Home Attendant	310	599	122.4
30. Medical Assistant	4,471	5,070	13.9
31. Orthopedic Cast Technician	45	94	122.5
32. Operating Room Technician	1,677	2,192	39.0
33. Psychiatric Aide	17,411	21,150	22.4
34. Medical Illustrator	41	57	41.0
35. Medical Record Librarian	519	665	32.2
36. Medical Record Technician	470	719	56.8
37. Medical Record Clerk	1,638	2,215	37.1
38. Medical Secretary	8,506	10,000	18.8
39. Receptionist (MD Office)	7,435	8,018	8.1

Table 2C. Combined Manpower Needs for Five-Year Period in Surveyed Occupations at Medical Care Establishments, New York State

Occupation	Current actual employment Dec. 1966	Jobs to be filled 1966-1971 period			
		Estimated total	Current under-staffing	New positions	Net replacement of deaths and retirements[1]
Total, surveyed occupations	181,837	112,983	20,685	53,583	38,715
1. Nurse (R.N.)	48,576	38,423	13,844	14,524	10,055
2. Licensed Practical Nurse	20,192	15,386	2,746	5,492	7,148
3. Nurse Aide	45,581	20,831	— 1,413	12,945	9,299
4. Orderly	4,264	3,241	665	1,706	870
5. Ward Manager	160	257	11	221	25
6. Medical Supply Clerk	1,004	545	78	309	158
7. Ward Clerk	3,495	2,472	266	1,657	549
8. Cytotechnologist	181	204	25	146	33
9. Medical Technologist	2,789	1,783	324	951	508
10. Medical Laboratory Assistant (Technician)	3,533	1,936	233	1,060	643
11. Laboratory Helper	1,125	665	60	400	205
12. Pharmacy Helper	399	311	33	205	73
13. Artificial Kidney Technician	18	65	—	62	3
14. Cardiopulmonary Technician	103	148	14	115	19
15. Electrocardiograph Technician	977	518	44	296	178
16. Electroencephalograph Technician	190	174	6	133	35
17. Oxygen Therapy Technician	702	776	72	576	128
18. X-ray Technician	3,477	2,052	515	904	633
19. Physical Therapist	1,138	1,213	242	747	224
20. Physical Therapy Aide	469	878	63	723	92
21. Occupational Therapist	738	1,296	290	861	145
22. Occupational Therapy Aide	512	526	13	412	101
23. Recreational Therapist	598	531	125	288	118
24. Educational Therapist	85	97	7	73	17
25. Speech & Hearing Clinician	198	196	38	119	39
26. Orthoptist	28	31	2	23	6
27. Prosthetist-Orthotist	44	25	1	16	8
28. Ambulance Attendant	861	473	28	269	176
29. Home Attendant	274	477	86	335	56
30. Medical Assistant	4,308	1,546	163	599	784
31. Orthopedic Cast Technician	43	66	5	53	8
32. Operating Room Technician	1,360	1,144	366	530	248
33. Psychiatric Aide	16,725	7,512	722	3,746	3,044
34. Medical Illustrator	39	25	2	16	7
35. Medical Record Librarian	465	302	68	150	84
36. Medical Record Technician	441	361	32	250	79
37. Medical Record Clerk	1,583	920	84	587	249
38. Medical Secretary	7,985	3,473	567	1,501	1,405
39. Receptionist (MD Office)	7,177	2,104	258	583	1,263

[1] "Retirements" cover permanent separations from the labor force for age or other reasons. Figures are based on rates adapted from estimates developed for respective groups of occupations by the Division of Research and Statistics of the New York State Department of Labor.

Table 3. Manpower Supply and Demand in Surveyed Occupations at Medical Care Establishments, New York State

Occupation	Estimated number of graduates of training programs in five-year period through 1971			Identified need for five-year period through 1971	Imbalance between training output and identified need	Per cent of identified need being met by training programs
	In-service programs	School programs	Total			
Total, excluding #39, Receptionist	35,668	61,489	97,157	[1] 110,879	—13,722	87.6%
INADEQUATE SUPPLY[2]						
Subtotal, 28 occupations[3]	16,681	33,923	50,604	77,226	—26,622	65.5
3. Nurse Aide	6,545	5,341	11,886	20,831	—8,945	57.1
1. Nurse (R.N.)	6,394	23,282	29,676	38,423	—8,747	77.2
7. Ward Clerk	571	357	928	2,472	—1,544	37.5
4. Orderly	1,500	792	2,292	3,241	—949	70.7
21. Occupational Therapist	125	283	408	1,296	—888	31.5
20. Physical Therapy Aide	94	48	142	878	—736	16.2
37. Medical Record Clerk	204	114	318	920	—602	34.6
6. Medical Supply Clerk	28	45	73	545	—472	13.4
22. Occupational Therapy Aide	49	24	73	526	—453	13.9
11. Laboratory Helper	89	170	259	665	—406	38.9
17. Oxygen Therapy Technician	281	141	422	776	—354	54.4
15. Electrocardiograph Technician	85	99	184	518	—334	35.5
12. Pharmacy Helper	35	—	35	311	—276	11.3
35. Medical Record Librarian	14	18	32	302	—270	10.6
29. Home Attendant	11	200	211	477	—266	44.2
19. Physical Therapist	50	948	998	1,213	—215	82.3
5. Ward Manager	60	—	60	257	—197	23.3
23. Recreational Therapist	49	295	344	531	—187	64.8
16. Electroencephalograph Technician	25	—	25	174	—149	14.4
36. Medical Record Technician	46	167	213	361	—148	59.0
14. Cardiopulmonary Technician	13	—	13	148	—135	8.8
24. Educational Therapist	4	—	4	97	—93	4.1
18. X-ray Technician	379	1,599	1,978	2,052	—74	96.4
31. Orthopedic Cast Technician	9	—	9	66	—57	13.6
13. Artificial Kidney Technician	17	—	17	65	—48	26.2
26. Orthoptist	—	—	—	31	—31	—
27. Prosthetist-Orthotist	2	—	2	25	—23	8.0
34. Medical Illustrator	2	—	2	25	—23	8.0
ADEQUATE SUPPLY[2]						
Subtotal, 10 occupations[3]	18,987	27,566	46,553	33,653	12,900	138.3
32. Operating Room Technician	780	377	1,157	1,144	13	101.1
28. Ambulance Attendant	443	100	543	473	70	114.8
8. Cytotechnologist	90	230	320	204	116	156.9
9. Medical Technologist	226	1,853	2,079	1,783	296	116.6
25. Speech & Hearing Clinician	1	896	897	196	701	457.7
38. Medical Secretary	149	4,172	4,321	3,473	848	124.4
30. Medical Assistant	10	2,650	2,660	1,546	1,114	172.1
10. Medical Laboratory Assistant (Technician)	238	3,419	3,657	1,936	1,721	188.9
2. Licensed Practical Nurse	3,363	13,869	17,232	15,386	1,846	112.0
33. Psychiatric Aide	13,687	—	13,687	7,512	6,175	182.2

[1] Excludes projected demand for 2,104 Receptionists (Physician's Office), since corresponding training data were not collected for that occupation.

[2] Caution is urged in interpreting these categories, especially the figures in the last two columns. These figures represent only a raw comparison between the two preceding columns and therefore contain no consideration of important unmeasured factors which modify the demand and supply. (See Methodology and Scope in Appendix, and discussion on pages 6-9.)

[3] Numbers at extreme left are those that identify occupations in all tables. Order of listing of occupations in this table is by size of imbalance between training output and identified need.

Table 4. Capacity, Enrollment and Number of Graduates of School Training Programs for Selected Health Service Occupations, New York State

Occupation	Regular programs			Temporary programs			Estimated total number of graduates[1] in five-year period 1967-71
	New entrants capacity 1967	Estimated enrollment 1967	Estimated graduates 1967	New entrants capacity 1967	Estimated enrollment 1967	Estimated graduates 1967	
Total, surveyed occupations (excluding #39[2])	24,144	19,363	10,857	3,054	2,806	1,488	61,489
1. Nurse (R.N.)	9,343	7,515	4,347	260	176	173	23,282
2. Licensed Practical Nurse	3,670	3,472	2,104	2,269	2,216	1,008	13,869
3. Nurse Aide	1,894	1,840	993	175	149	142	5,341
4. Orderly	226	219	129	57	57	57	792
5. Ward Manager	—	—	—	—	—	—	—
6. Medical Supply Clerk	20	9	9	—	—	—	45
7. Ward Clerk	125	125	69	15	-0-	-0-	357
8. Cytotechnologist	87	81	46	—	—	—	230
9. Medical Technologist	841	697	352	—	—	—	1,853
10. Medical Laboratory Assistant (Technician)	1,397	1,008	626	60	33	9	3,419
11. Laboratory Helper	79	72	34	—	—	—	170
12. Pharmacy Helper	—	—	—	—	—	—	—
13 Artificial Kidney Technician	—	—	—	—	—	—	—
14. Cardiopulmonary Technician	—	—	—	—	—	—	—
15. Electrocardiograph Technician	50	15	15	—	—	—	99
16. Electroencephalograph Technician	—	—	—	—	—	—	—
17. Oxygen Therapy Technician	40	35	-0-	15	15	-0-	141
18. X-ray Technician	543	441	249	—	—	—	1,599
19. Physical Therapist	476	431	156	—	—	—	948
20. Physical Therapy Aide	15	15	-0-	—	—	—	48
21. Occupational Therapist	202	97	51	—	—	—	283
22. Occupational Therapy Aide	10	10	-0-	—	—	—	24
23. Recreational Therapist	352	135	35	—	—	—	295
24. Educational Therapist	—	—	—	—	—	—	—
25. Speech & Hearing Clinician	701	480	195	—	—	—	896
26. Orthoptist	—	—	—	—	—	—	—
27. Prosthetist-Orthotist	—	—	—	—	—	—	—
28. Ambulance Attendant	30	30	-0-	—	—	—	100
29. Home Attendant	193	177	108	—	—	—	200
30. Medical Assistant	1,601	1,119	521	—	—	—	2,650
31. Orthopedic Cast Technician	—	—	—	—	—	—	—
32. Operating Room Technician	114	78	55	12	14	10	377
33. Psychiatric Aide	—	—	—	—	—	—	—
34. Medical Illustrator	—	—	—	—	—	—	—
35. Medical Record Librarian	25	9	-0-	—	—	—	18
36. Medical Record Technician	60	60	10	—	—	—	167
37. Medical Record Clerk	—	—	—	176	146	89	114
38. Medical Secretary	2,050	1,193	753	15	-0-	-0-	4,172

[1] Computed on basis of 1967 output level modified by prospective changes reported for the regular programs, and assumed discontinuance of temporary programs.

[2] Receptionist (MD Office) not included among surveyed occupations at time of School Training Programs Inventory.

Table 5. Availability of School Training Programs, by Occupation and Area, for Selected Health Service Occupations New York State, February 1967

(Upstate areas, designated by name of central city, include metropolitan areas and surrounding counties)

Occupation	New York City	Long Island	White Plains	Albany	Binghamton	Buffalo	Rochester	Syracuse	Utica
1. Nurse (R.N.)	X	X	X	X	X	X	X	X	X
2. Licensed Practical Nurse	X	X	X	X	X	X	X	X	X
3. Nurse Aide	X	X	X	X	X	X	X	X	X
4. Orderly	X		X		X				X
5. Ward Manager	X								
6. Medical Supply Clerk	X					X			
7. Ward Clerk	X						X	X	
8. Cytotechnologist	X	X	X	X	X	X	X	X	
9. Medical Technologist	X	X	X	X	X	X	X	X	X
10. Medical Laboratory Assistant (Technician)						X			
11. Laboratory Helper									
12. Pharmacy Helper									
13. Artificial Kidney Technician									
14. Cardiopulmonary Technician									
15. Electrocardiograph Technician	X								
16. Electroencephalograph Technician									
17. Oxygen Therapy Technician	X	X							
18. X-ray Technician	X	X	X	X	X	X	X	X	X
19. Physical Therapist	X	X		X	X	X		X	
20. Physical Therapy Aide	X								
21. Occupational Therapist	X								
22. Occupational Therapy Aide						X			
23. Recreational Therapist	X				X				
24. Educational Therapist									
25. Speech & Hearing Clinician	X	X			X			X	
26. Orthoptist									
27. Prosthetist-Orthotist	X								
28. Ambulance Attendant			X	X				X	
29. Home Attendant	X	X				X			
30. Medical Assistant									
31. Orthopedic Cast Technician	X	X				X			
32. Operating Room Technician									
33. Psychiatric Aide						X			
34. Medical Illustrator									
35. Medical Record Librarian						X			
36. Medical Record Technician					X		X		
37. Medical Record Clerk	(1)					(1)			
38. Medical Secretary	X	X	X	X	X	X	X	X	

1 Temporary programs only.

Methodology and Scope

METHODOLOGY: The survey questionnaires, designed for mail distribution, were adapted from the BES Handbook on Area Skill Surveys. Many persons in New York State Departments (Labor, Education, Health, and Mental Hygiene) and in representative business and professional organizations in the health service field were consulted to assure appropriate coverage and acceptance. The survey director, Associate Economist Herman S. Solomon, also relied importantly on the field activity of the Division's Labor Market Analysts for the actual conduct of the survey.

All hospitals, nursing homes, clinics, home nursing services, and ambulance services in the State were canvassed by these field economists, using interview and followup techniques through personal visit and telephone as well as mail. The usable response rate among these establishments was 75 per cent of the employers and represented 89 per cent of total employment. Universe estimates (based on ratio of current total employment for a group of establishments to current total employment of respondents in the group) were derived separately for each District and for appropriate subgroups by size, area, and special type of establishment. Editing and compilation of the responses into worksheet summaries were performed by the field economists following methodological instructions prepared by the survey director who in turn produced the tabulations and findings reported herein. The common basis presented to these establishments for estimating their future employment was the specified set of assumptions that (a) qualified workers would be available to fill all budgeted positions, and (b) the upward population trend, the high level of economic activity, the international tensions, and progress in technology, science, and medical care would all continue as in the recent past.

Physicians' offices were canvassed separately—on a stratified sampling basis—by a mailing from the Central Office, and their responses were processed centrally. The sample, drawn from an Unemployment Insurance Accounts Bureau tape of reporting units classified in SIC industry code #8011, included all establishments in those counties having fewer than 10 reporting units; and in the remaining counties, all establishments with 5 or more employees, and a random selection of 10 per cent to 50 per cent (depending on number of reporting units in a county) of the smaller employers. The sample as a whole consisted of 2,491, or 23 per cent, of the 10,893 employing units. The 1,021 usable responses represented 9 per cent of the total number of units and 18 per cent of their total employment. Universe totals were derived on a county basis and by size of unit. Estimates of future employment by physicians were requested to be "in line with expected changes in the demand for medical care as affected by (1) changing size or nature of the patient load, and by (2) continued advances in medical science and modes of medical care."

School facilities were canvassed by the Division's District and Local Office staff in February 1967 to obtain an inventory of training programs in the 38 occupations initially selected for coverage in the manpower requirements survey. The projected 5-year training output was measured by the 1967 operating levels, adjusted where identifiable proportions of graduates were expected to leave the State, and modified by planned changes in regular programs and the assumed discontinuance of temporary programs.

SCOPE: For general restraint and perspective in interpreting the findings, it is well to point out here that the scope of this survey is limited both in the range of occupations covered and in the range of establishments employing these occupations. Among the exclusions are such occupations as doctor, dentist, pharmacist, psychologist, rehabilitation counselor, dietitian, optician, social worker, health educator, dental assistant, hospital laundry and food workers, etc.; independent health services such as medical and dental laboratories, drug stores, optometrists, podiatrists, etc.; manufacturers and suppliers of hearing aids and other prosthetic appliances, medical instruments and equipment, pharmaceuticals, etc.; in-house medical service units of industrial firms, schools, resorts, prisons, child-care institutions, armed forces, etc.; faculty, research, clinical, and administrative staffs of colleges and other agencies for training health service personnel; and such establishments as medical libraries and publishers, research founda-

tions, public health agencies, insurance companies, etc. which employ health professionals, technicians, and assistants.

Thus, the *demand* data here presented reflect the need of only a limited portion of the total field of employment for workers in health service occupations. Also, the data understate the demand by excluding the very significant replacement need arising out of unmeasured turnover, i.e., dismissal, temporary withdrawal from the labor market, and switching to other occupations. An additional source of understatement is the inevitable exclusion of new unaffiliated employing units that may be established during the five-year projection period though not currently known to planning and governing officials. Another unaccounted source of error is the likelihood that a continuing shortage of manpower and a rising demand for health care, combined with advancing technology, will generate administrative efforts to improve efficiency by changing the patterns of staffing and of manpower utilization.

Likewise, the manpower *supply* data for the occupations covered are circumscribed by the effects of unmeasured elements, including: attrition from nonemployment after completion of training, occupational and geographic mobility (both inward and outward), competition from other parts of the health service industry for the same supply, and gain from new entrants trained informally on the job.

Job Definitions

Selected Medical Service Occupations

Jobs generally requiring more than two years of training beyond high school are designated by the letter *A* after the job titles. Those requiring two years or less are designated by *B*. More detailed job descriptions may be found in the Third Edition of the Dictionary of Occupational Titles (D.O.T.).

1. NURSE, PROFESSIONAL (R.N.): *A*—Performs duties requiring substantial specialized judgment and skill in the observation, care and counsel of ill, injured or infirm persons and in the promotion of health and prevention of illness. (D.O.T. Code 075.378)
2. NURSE, LICENSED PRACTICAL: *B*—Cares for ill, injured, convalescent, and handicapped persons in hospitals, clinics, nursing homes, and private homes. (D.O.T. Code 079.378)
3. NURSE AID: *B*—Assists in care of hospital patients, under direction of nursing and medical staff. (D.O.T. Code 355.878)
4. ORDERLY: *B*—Assists in care of hospital patients, under direction of nursing and medical staff. (D.O.T. Code 355.878)
5. WARD MANAGER: *B*—Acts as Administrative Assistant to Head Nurse; assigns and supervises housekeeping functions such as cleaning, assures adequate provision of linens and other supplies; may supervise non-nursing personnel.
6. CENTRAL SUPPLY TECHNICIAN (or MEDICAL SUPPLY CLERK): *B*—Supervises or personally performs the distribution of linens, drugs, instruments, etc., in a hospital including sterilization, preparing, processing and packaging. Checks on electrical medical equipment. Keeps inventory of supplies. (D.O.T. Code 223.887)
7. WARD CLERK (or FLOOR CLERK): *B*—Prepares and compiles records in hospital nursing unit; copies information from nurses' records onto patients' record cards; requisitions supplies designated by nursing staff. (D.O.T. Code 219.388)
8. CYTOTECHNOLOGIST: *A*—Stains, mounts, and studies cells of the human body to determine pathological condition; examines specimen, and diagnoses nature and extent of disease or cellular damage (D.O.T. Code 078.281)
9. MEDICAL TECHNOLOGIST: *A*—Performs chemical, microscopic, and bacteriologic tests to provide data for use in diagnosis and treatment of disease. May be designated according to field of specialization as BIOCHEMISTRY TECHNOLOGIST, BLOOD BANK TECHNOLOGIST, HEMATOLOGY TECHNOLOGIST, MICROBIOLOGY TECHNOLOGIST, SEROLOGY TECHNOLOGIST, NUCLEAR MEDICAL TECHNOLOGIST. (D.O.T. Code 078.281)
10. MEDICAL LABORATORY ASSISTANT (or MEDICAL TECHNICIAN): *B*—Performs routine tests such as urinalysis and blood counts in medical laboratory for use in treatment and diagnosis of disease. May be designated according to field of specialization as BLOOD BANK TECHNICIAN, CYTOTECHNICIAN, HEMATOLOGY TECHNICIAN, SEROLOGY TECHNICIAN, TISSUE TECHNICIAN. (D.O.T. Code 078.381)
11. LABORATORY HELPER: *B*—Assists in the medical laboratory by performing functions such as washing and sterilizing glassware and equipment, preparing solutions and culture media, caring for laboratory animals, and other relatively simple operations. (D.O.T. Code 381.887)
12. PHARMACY HELPER: *B*—Mixes pharmaceutical preparations, under direction of Pharmacist, issues medicines, labels and stores drugs, chemicals, and supplies, and cleans equipment and work areas in hospital pharmacy. (D.O.T. Code 074.387)
13. ARTIFICIAL KIDNEY TECHNICIAN: *B*—Sets up, operates, and maintains artificial kidney equipment under direction of Physician.
14. CARDIOPULMONARY TECHNICIAN: *B*—Performs specialized analyses of blood and gas samples obtained from patients having pulmonary function tests and cardiac catheterizations; helps set up equipment and collect samples.
15. ELECROCARDIOGRAPH TECHNICIAN: *B*—Records variations in action of heart muscle, using electrocardiograph machine to provide data for diagnosis of heart ailments. (D.O.T. Code 078.368)

16. ELECTROENCEPHALOGRAPH TECHNICIAN: *B*—Operates electrical equipment to measure impulse frequencies and differences in potential between various portions of the brain, to be used by medical practitioner in diagnosing brain disorders. (D.O.T. Code 078.368)

17. INHALATION THERAPIST (or OXYGEN THERAPY TECHNICIAN): *B*—Sets up and operates various types of oxygen equipment, such as iron lungs, oxygen tents, resuscitators, and incubators to administer oxygen and other gases to patients. (D.O.T. Code 079.368)

18. RADIOLOGIC TECHNOLOGIST (or X-RAY TECHNICIAN): *B*—Applies X-rays and radioactive substances to patients for diagnostic and prescribed therapeutic purposes. (D.O.T. Code 078.368)

19. PHYSICAL THERAPIST: *A*—Treats patients with disabilities, disorders, and injuries, using physical means, such as exercise, massage, heat, water and electricity, as prescribed by Physician. (D.O.T. Code 079.378)

20. PHYSICAL THERAPY AID: *B*—Prepares patients for treatment by PHYSICAL THERAPIST by assisting them in dressing, undressing, and moving about. Sets up and assembles such equipment as hydrotherapy tanks and vibrators. Places patients in position and times length of treatment. (D.O.T. Code 355.878)

21. OCCUPATIONAL THERAPIST: *A*—Plans, organizes and participates in medically oriented occupational program in hospital or similar institution to rehabilitate physically or mentally ill patients. (D.O.T. Code 079.128)

22. OCCUPATIONAL THERAPY AID: *B*—Assists OCCUPATIONAL THERAPIST in administering medically oriented occupational program to assist in rehabilitating patients in hospitals and similar institutions. (D.O.T. Code 079.368)

23. RECREATIONAL THERAPIST: *A*—Plans, organizes, and directs medically approved recreation program for patients in hospitals and other institutions. (D.O.T. Code 079.128)

24. EDUCATIONAL THERAPIST: *A*—Instructs patients in prescribed academic subjects to prevent mental deconditioning and aid in rehabilitation. (D.O.T. Code 091.228)

25. SPEECH AND HEARING CLINICIAN: *A*—Examines and provides remedial services for persons with speech and hearing disorders. (D.O.T. Code 079.108)

26. ORTHOPTIST (or ORTHOPTIC TECHNICIAN): *A*—Teaches strabismic patients, usually children, to use their eyes together, correctly and comfortably. May perform orthoptic and pleoptic evaluation, diagnosis, and treatment of extraocular muscle anomalies. (D.O.T. Code 079.378)

27. PROSTHETIST-ORTHOTIST: *A*—Writes specifications for and fits artificial limbs, braces and appliances for body deformities and disorders, following prescription of Physician or other qualified medical practitioner. (D.O.T. Code 078.368)

28. AMBULANCE ATTENDANT (or MEDICAL EMERGENCY AID): *B*—Assists Ambulance Driver in lifting patients and renders first aid such as bandaging, splinting and administering oxygen. (D.O.T. Code 355.878)

29. HOME ATTENDANT (or HOME HEALTH AID): *B*—Performs a variety of non-professional duties in the care of elderly, convalescent, or handicapped persons in patient's home. Accompanies ambulatory patients outside home, as guide, companion, and aid. (D.O.T. Code 354.878)

30. MEDICAL ASSISTANT: *B*—Assists Physician in preparing patients for examination, taking temperatures, measuring weight and height, sterilizing instruments and equipment, and performing routine laboratory tests. (D.O.T. Code 079.368)

31. ORTHOPEDIC CAST TECHNICIAN: *B*—Does plaster cast and traction work for patients, assisting Surgeon in application of casts and traction during and after operative procedures, making molds for braces, and maintaining supplies and equipment for plaster work. (D.O.T. Code 712.884)

32. SURGICAL TECHNICIAN (or OPERATING ROOM TECHNICIAN): *B*—Performs a variety of duties as either scrub technician or circulating technician in the operating room of a hospital. (D.O.T. Code 079.378)

33. PSYCHIATRIC AID: *B*—Assists in the care of mentally ill patients, under direction of nursing and medical staff. (D.O.T. Code 355.878)

34. MEDICAL ILLUSTRATOR: *A*—Intreprets medical facts and progress in health fields through various visual presentations such as drawings, models, exhibits, photography, and television. (D.O.T. Code 141.081)

35. MEDICAL RECORD LIBRARIAN: *A*—Compiles and maintains medical records of hospital and clinic patients, (D.O.T. Code 100.388)

36. MEDICAL RECORD TECHNICIAN: *B*—Assists MEDICAL RECORD LIBRARIAN in the technical work of maintaining medical records, reports, disease indexes, and hospital statistics.

37. MEDICAL RECORD CLERK: *B*—Classifies medical records of hospital patients and compiles statistics for use in reports and surveys. (D.O.T. Code 249.388)

38. MEDICAL SECRETARY: *B*—Prepares medical charts and reports for doctor or hospital personnel, utilizing knowledge of medical terminology. (D.O.T. Code 201.368)

39. RECEPTIONIST (PHYSICIAN'S OFFICE): *B*—Performs general office duties in private physician's office, mainly handling appointments, correspondence, business records, and other clerical and stenographic work.